MCG Today

Medical College of Georgia, Spring 1986, Vol. 15, No. 1, USPS 867340

UPWARD AND ONWARD
with a medical center
just for kids

Clayton Becton

Late last year Clayton Becton slipped under a huge mower on his grandfather's farm. Clayton's mother thought he was dead. The youngster's head was injured, his abdomen and legs badly damaged, his liver lacerated. By the time he arrived at the Medical College of Georgia Hospital, Clayton was in shock and non-responsive. Surgery, more surgery and a battle with infection followed. But MCG doctors and nurses wouldn't give up. Clayton was given round-the-clock care by people who knew he wasn't just a scaled-down adult. They knew that, like other children, he needed treatment by specialists using specialized facilities tailored to children's needs. Twenty-four days after the accident, Clayton awakened from his coma. Two months later, he went home.

Clayton is what the MCG Children's Medical Center is all about — giving seriously ill and injured children a chance to lead full, productive lives. Clayton is also what the Children's Miracle Network Telethon May 31 and June 1 will be all about — raising money to expand the Children's Medical Center so that even more children can be treated in even better facilities.

This issue of MCG *Today* takes an in-depth look at some of the many pediatric programs, services and research at MCG. It looks at some of the children who have used those services, the doctors and nurses who provide the care, and the needs that must be filled to keep MCG at the cutting edge of pediatric health care.

MCG Today

Vol. 15, No. 1, USPS 867340

Executive Editor
John T. Anderson

Editor
Jeri Glick

Design
Cher Cornett

Photography
Elizabeth Harrington
William A. Willner

On the cover:

The red and yellow balloon on the front cover symbolizes the Children's Miracle Network Telethon, an effort by community volunteers to raise money for the MCG Children's Medical Center. The illustration was designed by Cher Cornett.

MCG *Today* (USPS) is sponsored by grants from MCG Foundation Inc. and produced by the Division of Institutional Relations, Medical College of Georgia, Augusta, Ga. 30912. Published quarterly, it is furnished to alumni and friends of MCG without charge. Second-class postage is paid at Augusta, Ga.

CONTENTS

Pediatrics comes of age.....2

MCG offers most medical services needed by children, but it is striving to expand programs and add subspecialties. Money raised from the Children's Miracle Network Telethon will help meet the needs.

Frank named telethon chairman.....5

John B. Frank, an Augusta bank executive, is leading volunteers from 22 counties surrounding Augusta in an all-out effort to make the Children's Miracle Network Telethon a success.

Babies aren't just scaled-down adults.....6

Lauren Smoldt was born with a tumor that almost doubled her size. Specialists, providing specialized care tailored to infants' needs, gave her a chance at a normal life.

Battling the odds.....8

MCG's neonatal intensive care unit wins more than it loses in the battle to turn around a grim statistic.

Riding an emotional roller coaster.....10

Everyone took Clayton Becton for dead after he slipped under a farm mower. But Clayton surprised them all, and provided one of the emotional highs that the staff in MCG's pediatric intensive care unit thrives on.

Combating cancer with the eight-in-one.....12

Kristen Eavenson is settling into being a child again now that an insidious intruder has been removed from the right side of her brain.

Taking control.....15

Cynthia Howard refuses to be ruled by her illness — diabetes.

That precious breath.....18

Breathing can be torturous for those with cystic fibrosis. Respiratory complications can kill them. But the MCG Cystic Fibrosis Center has mobilized specialists and subspecialists to treat victims of this fatal genetic disease.

When dental disease becomes deadly.....22

Proper dental care can be a matter of life and death for children with diseases such as leukemia and hemophilia.

Research update.....24

Researchers at MCG are trying to find ways to beat congenital heart defects, sickle cell anemia, mold allergies and a variety of other problems that affect children.

MCG in the News: Dr. Arlie R. Mansberger Jr.....27

The chairman of MCG's Department of Surgery has taken the helm of the Southern Surgical Association.

PEDIATRICS COMES OF AGE

Growing toward a comprehensive Children's Medical Center

by Toni Baker

Ingredients for a comprehensive Children's Medical Center:

• Take sufficient numbers of doctors skilled in the care of children.

• Add the latest in technology to aid in diagnosis and treatment.

• Strengthen with nurses specially interested and trained in the care of children.

• Mix in an assortment of support personnel who understand that taking care of children isn't just caring for small adults.

"We have most of these ingredients," said Dr. Albert Pruitt, Ellington Charles Hawes professor and chairman of the Medical College of Georgia Department of Pediatrics.

"All medical centers will have some weaknesses," he said.

But there's plenty of hard work going on to build on what MCG has in pediatrics and to get what is needed.

"What we have done over the past few years is to really emphasize the recruitment of the physicians we need on our hospital staff so we can offer all the subspecialty care that we need," Pruitt said.

Subspecialty care means services ranging from the care of the critically ill newborn, to repairing imperfect hearts, to detecting and treating unusual birth defects.

Recruitment of this subspecialty population has been successful.

With a few exceptions, MCG now offers most of the services needed by children.

Work is under way on the exceptions.

One void is in the area of organ and bone marrow transplantation. To fill the void, MCG has begun a kidney transplant program for children. A second pediatric nephrologist is being recruited to strengthen the service.

The next service offered likely should be bone marrow transplants, Pruitt said. This procedure is essential to treat some malignancies, immune deficiency problems and inherited disorders.

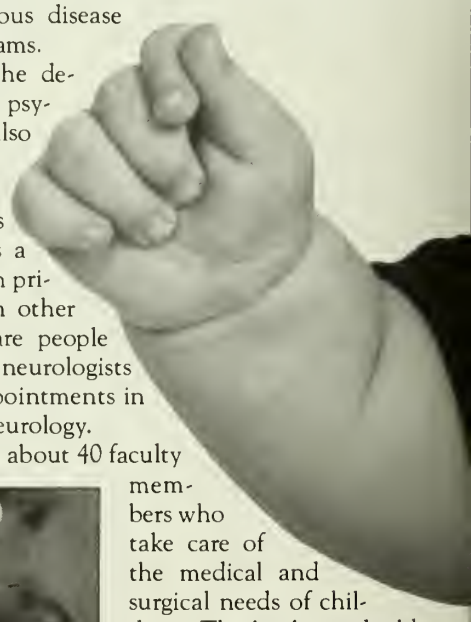
Outside the area of transplantation, the chairman is looking for a pediatric gastroenterologist.

MCG also does not have a pediatric pathologist, ophthalmologist or otolaryngologist. "Those areas need some attention in the next several years," Pruitt said.

Still much has been accomplished.

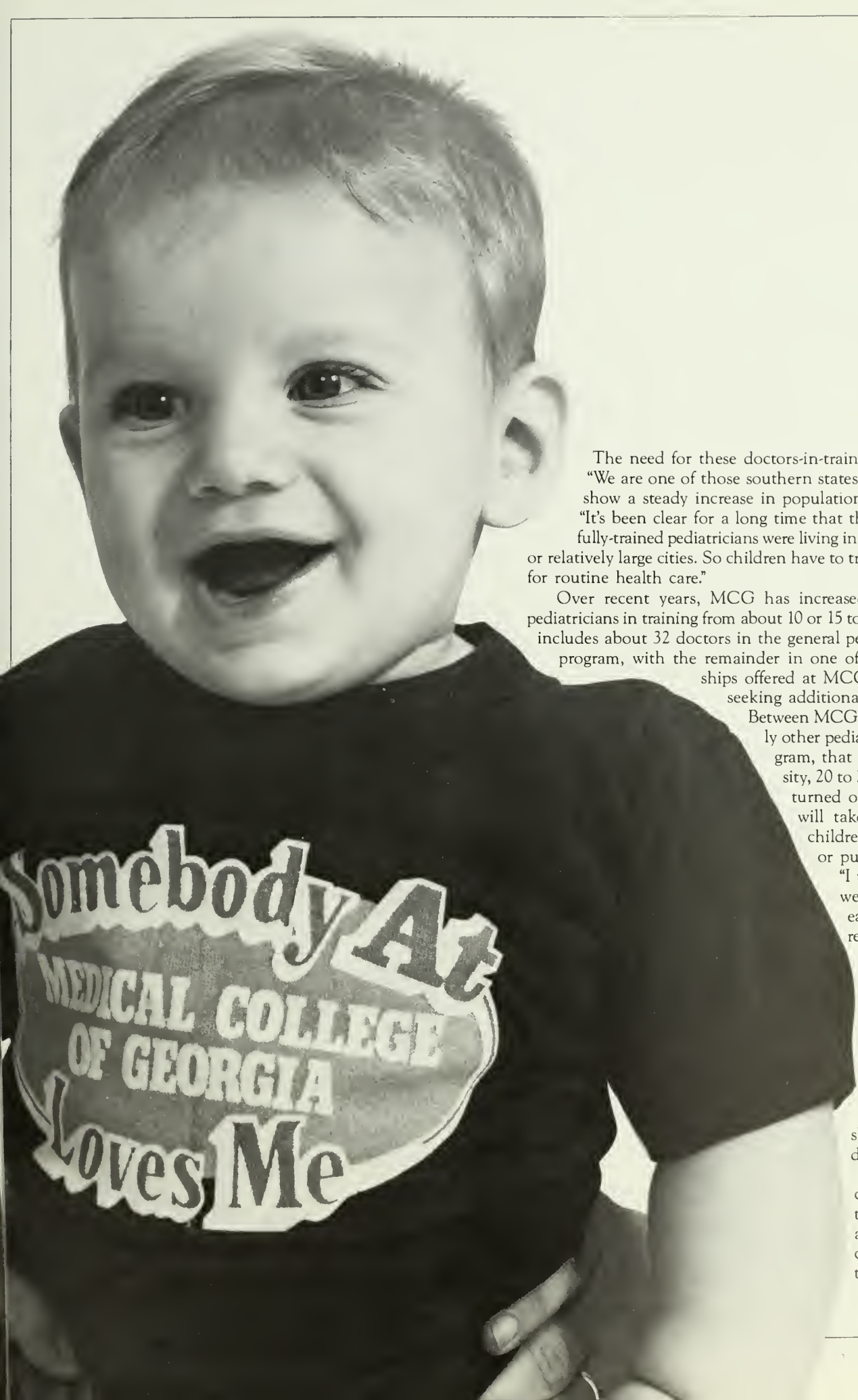
Recent years have brought the establishment of sections of nephrology, medical genetics, endocrinology and critical care within the Department of Pediatrics. These sections join the already established neonatology, cardiology, allergy, hematology/oncology, infectious disease and pulmonary programs.

Growth outside the department, such as in psychiatry and surgery, also has positively affected the care of children because Pruitt counts among his care givers a number of doctors with primary appointments in other departments. These are people such as the pediatric neurologists who have primary appointments in the Department of Neurology.



In total, MCG has about 40 faculty members who take care of the medical and surgical needs of children. That's about double the figure from five years ago.

Another essential element of the burgeoning children's medical center is the house staff, the men and women who have obtained their medical degrees and now are pursuing training in pediatrics or post-residency training in a subspecialty of pediatrics.



The need for these doctors-in-training is clear.

"We are one of those southern states that continues to show a steady increase in population," Pruitt said. "It's been clear for a long time that the majority of the fully-trained pediatricians were living in metropolitan areas or relatively large cities. So children have to travel 20 to 60 miles for routine health care."

Over recent years, MCG has increased the number of pediatricians in training from about 10 or 15 to 40. That 40 figure includes about 32 doctors in the general pediatrics residency program, with the remainder in one of the three fellowships offered at MCG for pediatricans seeking additional training.

Between MCG and the state's only other pediatric residency program, that of Emory University, 20 to 25 new doctors are turned out each year who will take care of infants, children and adolescents or pursue a fellowship.

"I think the number we are graduating each year now is a reasonable number for the state's needs," Pruitt said.

As work progresses to enhance the care provided to children, efforts also are under way to provide a special showcase for the department.

MCG will participate for the first time in the national Children's Miracle Network Telethon. The Osmond

Foundation-sponsored telethon will air for 21 hours beginning at 9 p.m. May 31 on WAGT, Channel 26 in the Augusta area.

The telethon is in its fourth year. Last year 115 hospitals raised $22 million to help children.

A unique aspect of this telethon is that 100 percent of the money raised for MCG Hospital and Clinics will stay at MCG Hospital and Clinics.

Work is progressing on production of a number of short videos featuring MCG pediatric patients and programs. The videos, produced by MCG's divisions of Institutional Relations and Health Communications, will be shown during 20 minutes of local programming out of every telethon hour.

MCG has offered two of the videos to the Osmond Foundation in the hope that at least one will be shown nationally during the telethon.

Even though the telethon is still months away, fund-raising has begun in earnest. Past telethons have shown that two-thirds of the money needs to be raised before the 21-hour event ever begins.

Brenda Drake, telethon coordinator, and Julie Plooster, assistant telethon coordinator, already have begun to approach Augusta area business and industry with the hope of gaining support for this special event.

Civic clubs and other groups also are needed to conduct fund-raising events and make this telethon a success.

"The telethon really will help us to support a number of programs we are unable to support without additional resources," Pruitt said.

As one of the units of the University System of Georgia, MCG and its hospital receive substantial state dollars for operation.

"The support we get from the state is very important to us," Pruitt said. "At present, we could not provide the care and operate the programs we now conduct without the support that we get from the state.

"Nevertheless, we recognize that we cannot expect to be totally supported by tax dollars. We therefore must generate dollars through the operation of the hospital and providing care to patients. The funds that you receive for providing care to patients will generally help you

Dr. Albert Pruitt

to maintain your current programs and gradually introduce new programs.

"What we want to do (with the telethon) is add additional clinical programs and provide resources and facilities to children and families that cannot be provided with dollars that come from other sources."

To that end, MCG's Department of Pediatrics has compiled a list of eight needs or services that will receive the support of telethon dollars raised this year.

One essential element of the children's medical center in need of attention is the facility itself.

The Department of Pediatrics is literally up against the MCG Hospital walls and currently has no place to grow.

Including intensive care beds, there are about 90 beds within the hospital for pediatrics. If the department had access to 110 or 120 beds, it would fill them within six months, Pruitt said.

Several options are being considered to meet facility demands, including the eventual construction of a special children's hospital on the MCG campus.

Twenty-five percent of the money raised through the telethon will go into an interest-bearing account to construct needed space.

Another compelling need is for a teacher in the hospital who will ensure that a child's schoolwork does not fall behind while health care providers work to heal bodies and minds.

Because of the critical or chronic nature of many of the problems that bring children to MCG, children may return for several visits in a year's time and each visit may last several weeks.

Pruitt noted one patient whose severe injury and subsequent disabilities have kept him in the hospital more than

Dr. Robert A. Parrish (L) and Dr. Charles G. Howell Jr., pediatric surgeons at MCG, examine David Martin.

a year. It's unclear at this point when that patient will be discharged.

In his time here, the youngster has reached school age. Because MCG has no permanent teacher and because so many of the children, such as this one, come from counties far away, he must depend on volunteers who are willing to come in and help him learn.

"He's a child who really does not need to get behind in his education," Pruitt said. The young patient's severe handicap requires that he learn many special skills along with the basics.

It is unfair that children, who already must cope with being sick and separated from their normal routines, must also fall behind in school, Pruitt said.

MCG needs a teacher who could integrate with one of the local boards of education and keep in regular contact with a child's own teacher to ensure that the child stays as current as possible with his education.

Other areas that will get the support of telethon dollars include:

• The children's cancer program, especially a five-day camp for young cancer patients. Each patient can bring a brother or a sister.

• Equipment of a special air and ground transport system for pediatric patients. Last year MCG treated patients from about 140 Georgia counties and parts of South Carolina. Many of these children were in critical condition at the time they were moved to Augusta. A special transport system would allow pediatric specialists to travel to the referring hospital, stabilize the child if needed and bring him safely to MCG. MCG has such a system for newborns.

• The 20-bed neonatal intensive care unit, which is a labor- and equipment-intensive unit. A pressing need of the unit is a nesting room where a baby and a mother, separated for long periods by the critical condition of the baby, can spend time together before the baby leaves the hospital. Another need of that unit is a computer system that would make vital information about the babies' conditions available at a central location. The system would improve monitoring of the babies and could be used to collect data that would help future babies.

• Ongoing research to learn more about the causes and cures of illness in children. Faculty at MCG are involved in the search for new knowledge. Some of the projects under way include studies to learn more about the cause of heart defects and efforts to improve the ventilation, or breathing support, often needed by premature infants whose own lungs are not yet up to the task.

• A comfortable waiting area for parents who want and need to be near their children in the pediatric intensive care unit. MCG has a six-bed ICU where critically ill or injured children get round-the-clock care. The beds are housed in a ward-like setting so parents cannot stay with their children as they might on the regular floors. Still many of the parents refuse to leave the hospital when their children are so ill. Now they must wait between visits in a sparsely-furnished area just outside the unit. MCG wants to renovate that space and create a more comfortable, friendly environment where parents can spend the long and often tense hours.

• The resident continuity care clinic for MCG's pediatricians-in-training. A vital part of the teaching process of young doctors is their learning how to work in a setting that mimics their future practices. In this clinic pediatric residents, under the supervision of department faculty, are responsible for the continuous care of a number of patients. This extends to taking night-call for these patients. A primary need of this clinic is money to buy educational materials to give to families as they work with the doctors to raise healthy, happy children. ■

Frank named telethon chairman

by Brenda Drake

John B. Frank, executive vice president of Trust Company Bank of Augusta, has been named area chairman of the Children's Miracle Network Telethon.

The telethon will benefit children's programs at the Medical College of Georgia. Sponsored by the Osmond Foundation, it will be broadcast for 21 hours in the Augusta area on WAGT television, Channel 26, May 31 and June 1.

Frank, appointed by MCG President Dr. Jesse L. Steinfeld, is leading an organization of telethon volunteers from 22 counties surrounding Augusta. The volunteers are organizing the telethon, coordinating fund-raising events by clubs and organizations, and appealing to businesses for support. An advisory board made up of business and community leaders is overseeing the fund-raising efforts and monitoring the use of the money.

Frank formerly was senior vice president of Trust Company Bank of Gwinnett County. He also has served as director of the Gwinnett Chamber of Commerce, president of the Gwinnett County Association for Retarded Citizens Inc. and director of the Gwinnett County YMCA.

John B. Frank

A native of Rome, Ga., Frank is married to the former Mary Ellen Barbiaux. They have two children, Cammie and Ryan. ■

Neonatal intensive care

Babies aren't just scaled-down adults

by Toni Baker

Rusty and Lori Smoldt were expectant.

It was four months until the birth of their first child.

Then a routine sonogram shattered the bliss.

A concerned Dr. Pat Williams, an obstetrician in private practice in Augusta, studied the baby growing in the mother and told the Smoldts that something was wrong.

He immediately sent Mrs. Smoldt to the Medical College of Georgia Hospital.

"It's hard to describe what it was like," she said. "You start wondering if, well, can you make a baby right. You start going through all those different feelings."

Follow-up studies at MCG revealed a huge growth at the tip of the baby's spine.

The unusual mass contained different body tissues, like skin, bone and intestinal lining.

"It's a sort of abortive attempt at twinning," said Dr. Robert A. Parrish, chief of pediatric surgery at MCG.

The course was clear. The tumor — dubbed sacrococcygeal teratoma — had to be removed quickly and completely after birth. If any tumor were left it could grow back and might be malignant. Also, the longer the baby had the tumor, the greater the chance of malignancy.

With just two weeks left for the Smoldts to decide whether to abort the pregnancy, the young parents digested the awful news and made the decision to give their baby a chance.

Nearly three months before her due date, Mrs. Smoldt, looking as though she were carrying twins, became a mother.

Lauren came into the world on June 30, 1983, weighing just under four pounds. The tumor added another two-and-a-half pounds.

"I thought she was the most beautiful baby in the world," father Rusty said of his baby with curly black hair.

But there was little time to contemplate.

The baby's immature lungs meant she needed a ventilator to support her breathing. The huge tumor meant she could only lie a certain way. Time was a critical element because of the concern about malignancy.

Parrish and Dr. Charles G. Howell Jr. teamed up for the complex surgery. "I think the two of us together can handle almost anything," said Howell, also a pediatric surgeon.

During the long and difficult process, the tumor, loaded with blood vessels, was gingerly resected. The growing mass had moved into Lauren's abdomen and displaced her rectum.

The couple received periodic updates from hospital staff while the team worked. Finally an exhausted Howell broke free and with pad and pen explained what had been done for their baby daughter.

Lauren Smoldt ▶

A few weeks later, a small growth reappeared at the tip of Lauren's spine. A second operation successfully removed the growth.

Before and after surgery, Lauren was cared for in MCG Hospital's 20-bed neonatal intensive care unit, alongside other babies who were born too soon or born with defects or other complications.

Lauren stayed in the neonatal intensive care unit through mid-August, when she was able to be moved to a room.

Nearly two-and-a-half years later, regular physical examinations and chest X-rays show no sign of tumor.

And despite the massive surgery, Lauren's scars are healing nicely.

Mastering walking and running has been a little frustrating because of the extent of the surgery. Her father says she just looks a little bowlegged when she runs.

"It's kind of hard not to be optimistic about her future since she's made it through so much," Mrs. Smoldt said.

Surgeon Parrish said it's the special needs of babies like Lauren that create the need for pediatric surgeons.

After all, babies aren't just scaled-down adults.

Parrish pointed out some distinct differences.

"The temperature regulation is completely different from an adult. The fluid regulation is completely different. They do not tolerate blood loss like adults do.

"The margin for error, I guess the best way to put it, is like dealing with a teaspoon full of tea instead of a jug of tea. You are working with such a small mass of tissue," Parrish said of his tiny patients.

"The metabolism is greatly accelerated, so the fluid requirements become something you have to pay attention to hourly instead of every eight hours or every 10 hours like you can with an adult. (Babies) get sicker quicker and they get well quicker."

The evolution of neonatal intensive care units and pediatric intensive care units has given the surgeons a vital edge in meeting the critical care needs of this special set of patients, he said.

Howell echoed his sentiments.

"(Lauren) is a prime example of why we have high-risk obstetricians, why we have excellent prenatal ultrasound," he said. The team rounds out with nurses, respiratory therapists, pediatric anesthesiologists experienced in managing babies during surgery, neonatologists versed in managing respiratory problems and other problems associated with immaturity as well as pediatric surgeons skilled at working with pint-sized patients and worried families. ■

Lauren and her father, Rusty Smoldt.

Battling the odds

by Toni Baker

The Medical College of Georgia's neonatal intensive care unit battles a grim statistic.

More people die on their first day of life than any other day.

"There is a tremendous mortality associated with being born," said Dr. William P. Kanto Jr., chief of MCG's section of neonatology.

He notes the top four problems.

Prematurity, being born too soon, is probably the No. 1 problem, mainly because the baby's lungs aren't ready to function. Other babies may be born about the right time but run into trouble in the actual process of being born. Then there are the babies born with defects. Last there are babies born to mothers who have medical problems that complicate the baby's life.

Such children keep the 20-bed neonatal intensive care unit at MCG full and often overflowing as the state medical school fulfills its role as one of five neonatal centers in Georgia.

It's an expensive proposition to operate one of these high-tech centers — expensive fiscally, physically and emotionally.

But in the high-stakes game of salvaging babies, you find a dedicated and determined lot.

"You obviously want to provide care such that all children will survive and all of them will be normal," Kanto said. "That's what you set out to do. (But) we don't have control over all that. Obviously we can't save all the babies. Obviously all we save won't be normal. You would like for the percentages in both groups to be as small as possible. But you have to recognize our human limitations and frailties."

There aren't many clear-cut rules in the critical care of neonates and newborns. In general, the smaller the baby the greater the risk, Kanto said. But you are never really 100 percent sure of outcomes.

"All of us who have been in the

business at least as long as I have have several children around that we have taken care of who, at some time during their course, we were certain they were going to die or at least be terribly damaged and those kids not only survived, they thrived," the neonatology chief said.

Within the crowded, special unit the babies calories, fluids, salts and minerals are juggled. Machines breathe for lungs that aren't up to the task.

The unit does not so much mimic the environment a mother would provide, as it seeks to provide a safe place for a developing human to go through the normal processes of maturing, said Dr. D. Spence Brudno, one of four neonatologists on the MCG faculty. Others include Kanto, Dr. Chantrapa Bunyapen and Dr. Alex F. Robertson III.

"In general you try to do as little as possible to get the end result as good as possible," Brudno said.

For example, every time you open the special Plexiglas incubators housing the babies, air rushes in. To these babies, who are used to the liquid environment provided by their mothers, the rush is annoying. "So we try to go in as little as possible through the doors. We use the cuffs in front of the doors and try to approach them that way."

The babies like the human touch—contact with warm and moving objects in their environment. They don't understand what it is but it's appealing because of their developing senses of touch and stimulus reponse.

"There is tremendous physiology to be appreciated in these babies. They respond in a rather predictable way," Brudno said.

"Because of the very delicate manipulations that have to be made in order to optimize outcome, (babies) require a high level of vigilance. That vigilance is accompanied by spending a lot of time at the bedside, talking with ancillary personnel about managing every aspect of care.

"You can't do that kind of vigilant care without getting very involved emotionally with the children." It's common for doctors to refer to the children as "their babies" or to strike up a conversation with a tiny patient.

Nurses in the unit also are a special breed. "They are skilled, they are intellectually sophisticated and they are very warm and caring people," Kanto said. "There's a special quality, an intangible I have trouble describing but which is necessary for a nurse to work in a neonatal ICU."

This special staff wins more than it loses in the battle to turn around sobering statistics about newborn deaths.

The vast majority of the children do well, a fact not readily apparent when you look at so many sick, small babies that comprise the census of the neonatal intensive care unit.

"If you make a save in a newborn, you have saved someone's entire lifetime," Brudno said. "It's an emotional pump up you don't think about very often but it's probably the reason most of us are in the business.

"The legacy of the excitement of this job is that you don't always succeed. The failures are felt very deeply."

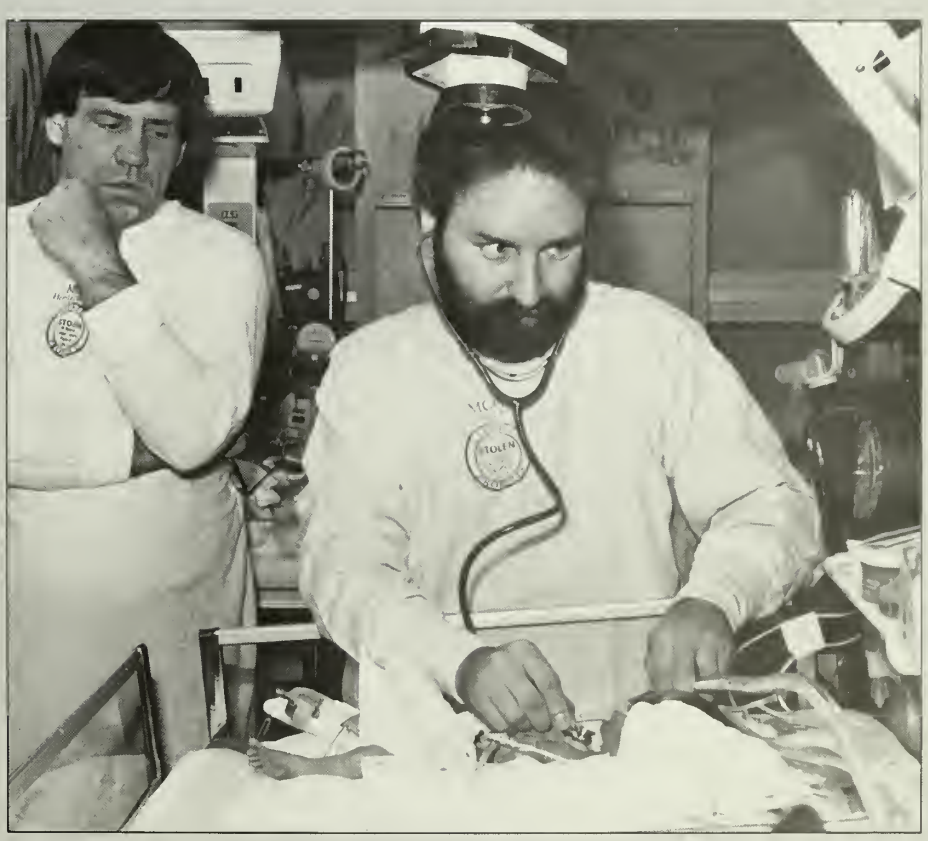
Kanto won't say he's ever resolved the inner conflict that arises when the result is not good no matter how heroic the effort.

"You have to feel that more good is coming out of it than bad, bad being a child badly damaged," Kanto said.

Studies indicate the mammoth efforts directed at these children are worth it. One of the efforts under way at MCG is to evaluate children cared for in the unit 10 years ago. Preliminary findings show these children are developing well physically and mentally.

"But the failures tend to stay with you longer than the successes," Kanto said.

"I feel most people feel that there is a fine line between doing your best and accepting it and feeling somehow you created a problem," Brudno said. "Most of us walk that fine line very precariously." ■



Dr. William P. Kanto Jr. (L) and Dr. Spence Brudno on neonatal rounds at MCG Hospital.

Dr. Mark Mudano examines Clayton Becton while his mother, Charlotte Becton, watches.

Pediatric care

Riding an emotional roller coaster

by Toni Baker

Dr. Charlie Howell remembers the blood-soaked grandfather standing there telling him that he couldn't live with himself if his 6-year-old grandson died.

Pressure multiplied by pressure.

Clayton Becton had fallen beneath a huge mower at grandfather Wilbur Redd's farm in Millen, Ga.

The mower nearly severed both legs. Clayton's head was injured, as was his abdomen. He was in shock and nonresponsive by the time he arrived at the Medical College of Georgia Hospital.

"I thought he was dead if you want to know the truth," said Clayton's mother, Charlotte Becton.

His doctors wouldn't have argued.

A scan of his head revealed severe and dangerous swelling of the brain from the head injury. His leg fractures were so bad that amputation was considered. A belly tap showed abdominal injuries. Clayton's liver was lacerated.

In the first few hours after his injury, Clayton needed a great deal — pediatric surgery, orthopedic surgery, neurosurgery, urology, pediatric intensivists and prayer.

During the long hours of the night of Sept. 19, 1985, and the early morning hours of Sept. 20 the team worked toward an uncertain end.

"I think the night that he came in our concern was what was his brain going to be," said Howell, pediatric surgeon.

"The other thing, because of the complexity of the injury, so many different injuries to so many different organ systems, the chance of survival becomes very low, particularly if you throw in sepsis, or massive infection."

Clayton did make it through his night of surgery with his legs intact, although their future function was uncertain.

But his troubles were hardly over.

After surgery he was placed in the hospital's special six-bed pediatric intensive care unit where children get round-the-clock attention from a myriad of health care providers.

"We had no idea how he would do," Howell said. Clayton would seem stable for a while, then his condition would deteriorate.

Then the child began posturing, assuming the fetal position he had years ago while safe inside his mother. But now that position was a sign of acute, progressive neurological changes.

Clayton was taken back to the operating room, this time so holes could be bored in his skull to make room for fluid to drain and to take pressure off the brain.

"That seemed to improve things for a period of time," Howell said. But not for long.

Clayton had gotten farm debris in his open wounds and he later developed a massive infection. The bug even got into his legs and there was again concern about his losing them. The infection made bad matters worse.

"It was hard to tell the parents from day to day how he was going to be," the pediatric surgeon said.

Clayton remained comatose, his outcome uncertain, for 24 days.

But when he began to stir, improvements were marked daily. He was weaned from the respirator that supported his breathing. He spoke his first word. He wanted to eat and drink. Finally he told his doctors what happened to him.

Physically he was moved from the pediatric intensive care unit — after a month there — to the intermediate care unit and finally onto the regular pediatric floor.

Two months and a day after he came to MCG Hospital, Clayton went home.

"From a medical standpoint he's done just fantastic," Howell said. The casts are off both legs. He's not walking yet, but the doctors and his family believe Clayton will walk. Therapists come to his Millen home several times a week, as does his school teacher. Clayton is slowly regaining the skills, both physical and mental, he had before the accident.

"The most gratifying thing as a pediatrician or as a pediatric intensivist, is to see a child . . . that everybody wrote off, to see him walk out of the hospital," said Dr. Angel R. Cuadrado, one of the pediatric intensivists who staffs the pediatric intensive care unit where Clayton spent his most critical first month.

In the special unit children like Clayton get the undivided, round-the-clock attention of doctors, nurses and other support personnel.

Within this unit, personnel must be ready to handle anything from a newborn recovering from heart surgery to a 12-year-old drowning victim to a trauma patient like Clayton with multiple surgical and medical needs.

Add to that task the need to help patients and parents through the emotionally tortuous ordeal.

"What I do and what Curt (Steinhart) does is an emotional roller coaster. Some days you are ecstatic because you feel like you have accomplished something," Cuadrado said.

Then come the lows.

These are the times when the staff puts a lot of time and energy into a child only to see the child do better for a while, then deteriorate and die. Some just never respond.

"You see the suffering of the child, the suffering of the family and that's hard sometimes, not only on the medical staff, but particularly on the nursing staff," Cuadrado said.

"You just have to learn to accept that the best you can provide at this point just is not enough. That's hard to accept."

But the wins are easily embraced. Cuadrado says you "swell up like a balloon" when you figure you had a part in saving a child's life.

"Clayton was one of the ecstatic moments. A lot of people wrote him off. I sort of had severe doubts in my mind several times. There were several times when we thought we were going to lose him. I think among other things the (pediatric intensive care unit) made a difference," he said then ticked off the list of pediatric subspecialists who cared for Clayton. "A coordinated effort by everybody made the difference."

"If you look at Clayton and you see him smile every time you see him coming down the hall in that wheelchair, you know he's pretty happy about all this," said Howell. "I think his granddaddy would say he was a good save." ■

Combating cancer with the eight-in-one

by Toni Baker

At first the symptoms seemed harmless enough.

Four-year-old Kristen Eavenson would get these headaches and be sick at her stomach.

It seemed like a virus or a sinus infection or an allergy.

Then Kristen fell and hit her head. The symptoms occurred more closely together after that.

The morning of Oct. 18, 1984, she had a severe attack. Her mother, Flip Eavenson, says Kristen sort of collapsed. She was taken to the hospital nearest their Columbia County home. There a neurologist recommended a scan of Kristen's head. Then he recommended a second one.

What that study showed brought shock and disbelief.

Kristen had a brain tumor.

"I guess horror is the right word," Mrs. Eavenson said. "Then you immediately start thinking, how did this happen? Why her? What did we do?

"I think we were just so in shock over the whole thing. The pediatrician just kept saying, she's got to be OK. It can't be the worst. She didn't have any of the other symptoms like loss of weight."

The young family brought their concerns and their child to the Medical College of Georgia Hospital.

Tests at MCG Hospital confirmed the original findings. Kristen had a tumor in the right side of her brain, and it had to come out.

When the family was told Dr. Humbert G. Sullivan would be the neurosurgeon for Kristen, the name only struck a vaguely familiar note. They knew their neighbor by the name Drew Sullivan.

On Oct. 23 their neighbor performed the 10-hour-plus surgery to remove as much tumor as possible. It was a scary time eased by frequent updates on progress in the operating room.

Twenty-two and a half hours after surgery, Kristen finally began to stir. Medical personnel had been concerned about this long period of sleep. But mother Flip and father Jimmy knew their daughter hadn't slept much before surgery and believed she was just catching up.

Kristen awoke at 5 the next morning in MCG's pediatric intensive care unit.

"She woke up and the first thing she wanted was her panties," her mother said. "We were worried she wasn't even going to be able to speak after brain surgery. It slayed them all. They said, what a proper little girl."

A day later Kristen was up coloring in bed. When the beeping machines in the intensive care unit started to annoy her, there was no doubt she was fine. After nearly three days in intensive care, Kristen was moved to the pediatric surgery unit for 10 days. Two days before Halloween she was home.

The family friend and neurosurgeon Drew came by the house to take out the stitches.

Says Kristen, "That was a horrible day. I said, 'oh brother.'"

But there were worse days ahead.

The tumor had to be sent away for special tests. It wasn't until 30 days after the surgery, Kristen's fifth birthday to be precise, that the family was certain the tumor was a malignant and very aggressive type.

Immediately, six weeks of radiation therapy was begun in hopes of completely eradicating the tumor, said Dr. P. Charlton Davis Jr., chief of pediatric hematology/oncology at MCG.

But a scan on Jan. 17, 1985, revealed a persistent, albeit smaller tumor.

Chemotherapy was the next step, and Kristen's problem required a special type.

Davis explained to the family that Kristen would get the eight-in-one treatment. That meant giving eight cancer-killing drugs in one 24-hour period.

The theory behind the approach is that you are using multiple cancer drugs with different mechanisms of action and you are using them in a sequence where one benefits the other, explained Davis.

All eight drugs were proven effective in treating brain tumors. But although the combination was a proven one, it had never before been used at MCG. Davis now is following nine patients on this intensive chemotherapy program.

Treatments like the eight-in-one are possible at MCG because of the Medical College's participation in the national Children's Cancer Study Group. "We are able to enroll patients on protocols to give them the most up-to-date cancer chemotherapy that's available, including not only drugs that are licensed but investigational drugs if they are needed to treat their cancer," Davis said.

Cancer treatment for children is provided on an outpatient basis at MCG whenever possible. Kids tolerate the treatment better and have a much better attitude if they aren't in the hospital, Davis said.

At the clinic, a playroom provides special security.

"Chemotherapy sounds terrible. Doing spinal taps and bone marrows is terrible," Davis said. "But these kids see the trade off, that they can have some fun even though they have to have the good with the bad."

Frances Friedman is one of the special people that helps make the clinic a happier place for children. "Frances probably single-handedly made the biggest turn around in (Kristen's) attitude and in our attitude toward MCG," Mrs. Eavenson said. "Until then (going to MCG meant) an awful lot of pain ... it was always getting stuck and it was always doing uncomfortable things. Frances put the focus on coming and having fun and getting a treat because you've been good whether you were or not," the mother said.

"Kristen will always say, don't put those smacky lips on me," said play lady, Friedman, better known to the kids as "Miss Frances." But the congenial play lady can't resist leaving a lipstick trail on bald heads.

Miss Frances' goal is to make the good outweigh the bad in this special clinic for children. "She (Kristen) doesn't always remember the shots. She doesn't always remember the nausea or vomiting

Kristen Eavenson ▶

or not feeling good. She will remember making a friend. She will remember fixing an IV, which is what Kristen likes to do. She'll remember the toy she got for being a good little girl.

"I spoil them. I bribe them for doing good," Friedman said. "They get Christmas toys and they get toys for giving me a hug and a kiss. But if that helps make this part easier in their lives, then what is so bad about a toy?"

Father Jimmy is grateful for the happiness the play lady has brought his daughter.

He and Kristen's mother would be happier still if they could take all the bad away.

"You'd much rather take over any of it yourself," said Mrs. Eavenson. "We have tried to protect her from knowing about the gravity of the situation. We can take over that mental anguish. That is what we are here for."

"Surgery and radiation therapy were tough," said Jimmy Eavenson. "That aged me. But then we got to chemotherapy and that scared the living hell out of me. I understand what they are doing. I understand the procedure. I've read all about it. But putting eight different poisons in your body, and that's all they are, then you've got to pump about two or three more in there just to keep those from having such a violent reaction. I tell you, I still cringe every time I go down there. I'd just as soon walk naked down Washington Road at 5:30 in the afternoon as for her to have one treatment. A lot of people in Augusta know me and that wouldn't be very nice. I'm just saying that I'd rather do that."

"It's a trade off," Davis said of the eight-in-one treatment. The good effect is the drugs kill tumor cells. The bad side is they also kill healthy cells, and there are side effects from both radiation therapy and chemotherapy in the developing brain.

But with an aggressive tumor like Kristen's, aggressive therapy was really the only way.

And it just may have done the job.

Kristen had to take 12 of these eight-in-one cycles. She finished the last one just before Christmas. Follow-up examinations showed no signs of the tumor.

If she's tumor-free for five years from the time of diagnosis, her chance of cure is nearly 100 percent, Davis said.

Kristen, now 6 and spunky, is playing catch up with school these days and settling into being a child again.

"I gave up everything I was in to stay home, take care of her, keep her spirits up if (I) have to stand on (my) head to do it," her mother said.

That doesn't mean not fussing at Kristen if she is bad or not disciplining her if she and big sister Katie get in a sibling squabble.

And it doesn't mean putting life on hold.

The family keeps planning adventures together, although the calendar suffers many black marks that reflect broken plans. "You can't live in a bubble. We want her to try to experience as much as she can because we don't know how long we will have her," Mrs. Eavenson said.

"But you know, we don't know how long we will have anybody. I think we are faced with the possibility of a very short life for Kristen. They (doctors) don't know. We want a cure. I guess everybody does. That's what we are hoping for, that we can keep her alive and in good enough shape for a long enough period of time that something else will come along so that if it does come back, it can be reckoned with and dealt with in a successful way." ■

Kristen (second from left) enjoys time with her family, (left to right) Jimmy, Katie and Flip Eavenson.

Cynthia Howard

TAKING CONTROL

by Catherine Boardman

With the proficiency of a registered nurse, 14-year-old Cynthia Howard carefully measures insulin into a plastic syringe and, without flinching, injects the fluid into her right thigh. She then looks up and smiles confidently as she wipes her thigh with an alcohol swab. "Sometimes it still hurts," she says. But for the ninth grader at Southeast Bulloch High School in Statesboro, Ga., insulin injections are a daily routine. She throws the syringe in the trash can and jumps up, raring to go.

Cynthia has diabetes, a disease for which there is no cure. She will have diabetes for the rest of her life, but she's determined not to let it control her. She plans to become a criminal lawyer despite the inconveniences of the illness.

Cynthia was almost 12 years old when diagnosed as diabetic. She had most of the symptoms — weight loss, lack of energy, excessive thirst and frequent urination. Her mother, Betty NeSmith, remembers the day before Cynthia was diagnosed.

"Cynthia slept all day long. She hardly had enough energy to lift her head off the pillow. It was a frightening experience," NeSmith said.

After Cynthia was diagnosed as diabetic, her condition often worsened. She was hospitalized about three times a year, four to five days at a time. She also was taken to the emergency room numerous times. But that was before — before Dr. William H. Hoffman established a 24-hour hotline for diabetic children, their families and physicians.

Hoffman, pediatric diabetes specialist and chief of the section of pediatric endocrinology at the Medical College of Georgia Hospital and Clinics, mans the hotline, which was put into operation in January 1985. It is the only such program in Georgia and one of about four in the country, Hoffman said.

Physicians use the service to establish an appropriate treatment regimen before transferring a child with diabetic ketoacidosis, a life-threatening condition that occurs when a diabetic's blood-sugar level is too high, to the pediatric intensive care unit at MCG. Of equal importance is the use of the hotline by diabetic children and their parents to receive instructions on handling problems that would otherwise result in a trip to the emergency room or a stay in the hospital.

The service makes life less disruptive for the diabetic child and cuts costs for the family. Such accessibility to a pediatric diabetes specialist also allows diabetic children and their families to make less urgent adjustments in their treatment regimens between clinic visits. "The program is an ideal mechanism for service, ongoing education and immediate and longterm cost containment," Hoffman said.

Recently, Cynthia came home from school with a slight cold and nausea. Her blood-sugar level had risen and ketones were present in her urine. In other words, her diabetes was out of control.

Cynthia's mother called Hoffman on the hotline and he made adjustments in Cynthia's insulin dosage. Within hours she was back to normal. Hoffman also called the next day to check on Cynthia.

Without the hotline, the family would have had to take Cynthia to an emergency room, NeSmith said.

"The hotline has been such a lifesaver. You have to be so careful in keeping diabetes under control," she said. Sometimes what appears to be a minor illness can throw Cynthia's diabetes out of whack. But Cynthia has not missed school, gone to an emergency room or been hospitalized since the hotline was established.

The hotline also gives peace of mind, NeSmith said. "I know that if something goes wrong, there is no need to panic. Within minutes I can find out what to do to get the problem under control."

But the hotline is only one facet of MCG's pediatric diabetes program. The program is designed to educate insulin-dependent children in all aspects of managing the disease.

"Diabetes is a subtle, insidious disease," Hoffman said. "There are few conditions where patient education is so important in terms of what the patient's future health will be."

"Diabetes occurs when the pancreas does not produce enough insulin to allow sugar, which gives you energy, to enter the blood cells. Without proper control, the (diabetic) body starts using fat for energy," Cynthia said, with the eagerness of a medical student.

Two types of diabetes exist — Type I or insulin-dependent and Type II or non-insulin dependent. Type I diabetes requires daily insulin injections and usually occurs in children and adolescents. Type II diabetes can be controlled with oral medications or diet and usually begins in adulthood.

Diabetes in children often is caused by a hereditary predisposition to an auto-immune process that injures the pancreas. The auto-immune process, in which the body reacts against itself, may be triggered by a viral infection, Hoffman said.

When diabetes develops at an early age, it increases the risk of later complications. The likelihood of developing eye, nerve, kidney and heart problems, for example, is greater for a child with diabetes, he said.

"However, the diabetic child and his family must realize that if the child is vigilant about maintaining good control, the chance that complications will occur is drastically reduced," Hoffman said.

Before she really understood diabetes, Cynthia feared the disease and would sometimes even skip her injections. "I would go in the bathroom, shut the door, wait a little while and tell my mother I had taken my injection when I actually hadn't. I would never ever do that again. I have to keep it (diabetes) under control so I won't have any problems when I get older," Cynthia said.

Cynthia's acceptance of her diabetic condition is due largely to the pediatric diabetes education program at MCG.

Acceptance is the first step in treating the diabetic child and his family, but most families go through a series of feelings that must be considered before the diabetic child and his parents can be effectively educated, Hoffman said.

Denial and shock are often the first reactions. These may be followed by sadness, depression and even anger. Many people think of diabetes as a disease "dear old Aunt Mildred had," not a condition that affects nearly two children out of every thousand, he said.

"Adolescents become particularly upset at the onset of diabetes since it alters their self-image during a period when being accepted by peers is so important," he said.

Fear — fear that other family members will become diabetic, fear of expenses, fear of long-term complications, fear of being different and fear of daily injections — is also common, Hoffman said.

Interspersed in the concern is usually some guilt, he said. "They (parents) often try to determine which side of the family has a history of diabetes. Although this might be interesting from a research standpoint, it has little value during the period immediately after a child is diagnosed."

A child psychologist may be needed to help a family work through these initial feelings. A team approach is best, Hoffman said. Two teams ideally work together: the family and a medical team consisting of a family physician, pediatric diabetes specialists, nurse specialists, pediatric dietitians and sometimes a child psychologist. This approach allows for individualized care and education.

Cynthia Howard (R) relaxes with her mother, Betty NeSmith.

Education begins after a family has begun to work through its feelings, he said. First the family is reassured that diabetes is controllable and that, with few exceptions, previous activities can be resumed.

Next diabetes is defined, and causes, effects and complications are explained. In addition, the means of controlling diabetes through insulin injections, exercise and diet are explained.

Diet is as important as insulin injections, Hoffman said. Careful coordination between insulin dose and diet is essential because of the need for consistency in daily caloric intake and minimal intake of simple sugars and saturated fats. As part of the program at MCG Hospital, two pediatric dietitians teach parents and children how to maintain a proper but flexible diet.

Cynthia thought she would never be able to eat some of her favorite foods again until the MCG dietitians explained the exchange diet to her. Foods listed in any one of six groups can be exchanged with foods in the same group.

For example, on Thanksgiving Cynthia could eat the banana pudding that she loves so much by exchanging one-half cup of pudding for two pieces of bread and one fruit.

A pediatric dietitian meets with Cynthia and her mother every three months when they come to MCG for routine visits. Having to eat at specified times was the major change in Cynthia's diet.

Learning to monitor blood-sugar levels is the next step in the education process. Several tests are used to monitor Cynthia's condition. Some of these tests she performs and others are performed at the pediatric diabetes clinic at MCG.

Cynthia tests and charts her blood-sugar level daily using a urine test. She places a tablet in the urine, causing it to change color depending on the presence or absence of glucose. Cynthia compares the color to a chart that gives her a reading. Blue is the reading she hopes for. It indicates her diabetes is under control.

How well a child is doing in school and how well he competes in peer activities also are good indications of how effectively his diabetes is controlled, Hoffman said.

"I know when something has gone wrong with my diet or insulin dosage," Cynthia said, adding that she gets nervous, feels dizzy, loses energy and becomes extremely thirsty.

Parents of younger diabetic children must learn to recognize these symptoms because the young child cannot verbalize his feelings, Hoffman said. Teachers also need to have some understanding of a student's diabetic condition, he said. A fact sheet prepared by the MCG staff titled "What the Diabetic Student Wants You to Know" is given to teachers at the family's request. One section, filled in by the diabetic child or his parents, lets teachers know what the child's individual needs are.

To children who find out they have diabetes, Cynthia's advice is: "Don't panic because if you take your insulin and watch your diet, you can keep your diabetes under control. You won't be different from anybody else." ■

That precious breath

by Jeri Glick

In the doctor's office, late last year, 3-year-old Lily Lamm suddenly started coughing, involuntarily, continuously. She barely had time to breathe. Her face started to turn red.

Her mother grabbed her and started blowing on her face.

"Come on Lily. Catch your breath. Catch your breath. Cough it up," her mother said and then started blowing on her face again.

After several minutes Lily coughed up a thick, colored substance, and the coughing stopped.

Her mother hugged her, held her tight. Then Lily drank a glass of water and returned to the toy truck she had tried to maneuver around the floor of the doctor's office earlier. Her round, blue eyes peered over the side of the truck, which was almost as big as she.

"I like to keep talking to her, blow on her face," explained her mother, Jeannene Lamm. "I keep talking to her so she'll catch her breath. Sometimes she's working so hard she forgets to breathe. Sometimes she turns red because she's not getting enough oxygen. At times she's even turned blue."

Dr. Karl H. Karlson Jr. walked into the room. Lily likes Karlson, an associate professor of pediatrics specializing in pediatric pulmonology at the Medical College of Georgia. She likes making the trip from her home in Columbia, S.C., to Augusta at least every two months to visit him. But, she said, "He needs lots of toys." That single toy truck isn't enough.

Lily doesn't realize the regular trips to MCG are unusual. She also doesn't think there's anything unusual about taking antibiotics four times a day, taking enzymes with each meal, taking vitamins regularly, taking a medicine to reduce vomiting and undergoing chest physiotherapy — which she calls "pat, pat" — twice a day. Chest physiotherapy involves pounding on the chest and back to help loosen and expel mucus in the lungs.

Lily knows her mucus is thick and hard to get out. But as far as she's concerned, there's nothing unusual about that.

"She tolerates it. This is all she knows," Lamm said.

◄ *Lily Lamm*

Dr. Karl H. Karlson Jr. examines Lily while her mother, Jeannene Lamm, looks on.

Lily has cystic fibrosis, an inherited disease that causes its victims to secrete a thick sticky mucus that clogs the airways in the lungs. The mucus makes breathing difficult and causes a chronic cough. Combined with chronic infection, it also causes scarring of the lung tissue, which often leads to death from respiratory failure. "The scarring of the lung doesn't leave enough lung tissue to keep them going," Karlson said.

Caucasians are the most frequently affected, with one in 20 carrying the gene that causes cystic fibrosis. About one in 70 blacks carry the gene, while Orientals rarely carry it.

The cough was what first alerted Lamm and her husband William Andrew Lamm that something was wrong. Lily was 6 months old when she developed a cold and then began coughing every 30 seconds.

The illness continued and the cough refused to go away. By age 9 months, Lily had lost weight.

Cystic fibrosis causes its victims to secrete unusually high concentrations of salt in the sweat. The most common way to identify the disorder is to test for excess salt. At 9 months old Lily was twice given the sweat test, and twice the results were positive. Chest X-rays further confirmed she had the disease.

The Lamms were shocked. No one in their families had ever had cystic fibrosis to their knowledge, but the disease is caused by a recessive trait so carriers don't show any symptoms.

No tests are available to determine whether someone carries the trait. Genetic testing may be possible within five years, though, if researchers are able to determine exactly where the gene that causes the disease is located. Late last year they localized it to 1 percent of the genetic material and, specifically, to chromosome No. 7.

"This is one of the great breakthroughs in the fight against this disease. This opens all sorts of avenues for carrier detection," Karlson said. In the long run, it may help researchers determine why cystic fibrosis occurs, he said.

One marriage in 400, such as the Lamms', pairs two carriers of the cystic fibrosis trait. Lily, in the genetic game of chance, had a one-in-four possibility of inheriting the trait from both her parents. When she did, she became the one child in 2,000 to have cystic fibrosis, the most common of the fatal, inherited diseases in children.

"My reaction was, 'Why me? Why did this happen to me?' " Lamm said.

"But then you turn it around and say, 'Why not me?' I'm a good mother and I can take care of her. But it's not all me. I have the strength of the Lord helping me. And not every family has a C.F. child. They're special."

Lily, at 9 months old, was placed in a hospital in Columbia, S.C., for three days and then released. "By that time I felt like I was left all alone," Lamm said. No one was there to give support or guidance or to explain the unusual manifestations of the disease — the inability to fully digest food, the susceptibility to bronchial infections, the chronic respiratory problems.

At 1 year old, Lily was brought to Augusta to see Karlson. The Lamms had learned that MCG is designated a Cystic Fibrosis Center by the Cystic Fibrosis Foundation, and they wanted to get the best possible treatment for Lily. They've been bringing Lily to Augusta since.

Lily's treatment may vary somewhat from that of other cystic fibrosis victims because each victim is affected differently, Karlson said.

Some with cystic fibrosis can't break down fats in the foods they eat without taking enzyme supplements. Natural enzymes that normally digest the fats can't get from the pancreas, where they are produced, to the small intestine, where the food is broken down. The enzymes are blocked by thick mucus in the passageways between the organs. The result: bulky, fatty stools, abdominal pain and malnutrition.

About 10 percent to 15 percent of cystic fibrosis victims are born with their intestines blocked by a thick, mucus-like substance that can be fatal if not discovered and corrected by surgery. Others don't learn they have cystic fibrosis until much later in life.

Glenn Smith, 22, of North Augusta, S.C., was believed for years to have a gastrointestinal disease.

Glenn Smith

A physician in Ohio, where Smith previously lived, suspected cystic fibrosis when he noticed the clubbing of Smith's fingertips when Smith was 11 years old. Sweat tests proved that suspicion accurate. Clubbing — in which the fingertips enlarge and the angles of the fingernails change, becoming convex — is common among cystic fibrosis victims, but researchers aren't sure why.

The 11 years before Smith was diagnosed gave him the chance to grow up feeling normal. Later, he had to learn to contend with the social and psychological stresses that accompany the disease, as well as the physical difficulties.

For adolescents with cystic fibrosis, there's the emotional stress of having poor images of their bodies and of not being able to do what their peers do, Karlson said. Boys have to deal with being small for their ages, continuously coughing and wheezing and having limited physical abilities. Girls also face the stigma of having underdeveloped breasts. In the words of one of Karlson's former patients: "C.F. means completely flat."

As cystic fibrosis victims approach marriage age, they must deal with another issue. The young men are sterile, and the women must weigh the risks of having children. Lung disease could complicate a pregnancy, and there would always be the chance of the child hav-

ing cystic fibrosis.

When Smith was just beginning high school, he was told to jog to help delay the onset of serious pulmonary problems. For four years he ran on his high school's cross-country team. During the off-season, he ran with his mother, rarely missing a day despite cold, snow, drizzle or heat.

The running came to an abrupt end in 1981 when Smith developed another symptom of cystic fibrosis. He started coughing up blood — five and seven ounces at a time, sometimes more.

Smith remembers the nights after he entered Ohio Northern University to major in mechanical engineering. He'd be studying in the library and the coughing would start. He didn't want to bother others so he'd go outside, alone.

"Here I'm coughing (blood into) this plastic bag in the dark, and no one knows it's happening," Smith said. "That's a pretty scary experience ... There's no higher contrast than arterial red blood on fresh white snow."

Problems multiplied. Smith's left lung collapsed. He was in and out of the hospital. One fall quarter he missed 80 percent of his classes. Much of his time while at school was devoted to therapy.

"That (therapy) is like a five-hour class, or a seven-hour class everyday, and you can't miss out," Smith said. No time for pizza with friends, bull sessions or parties.

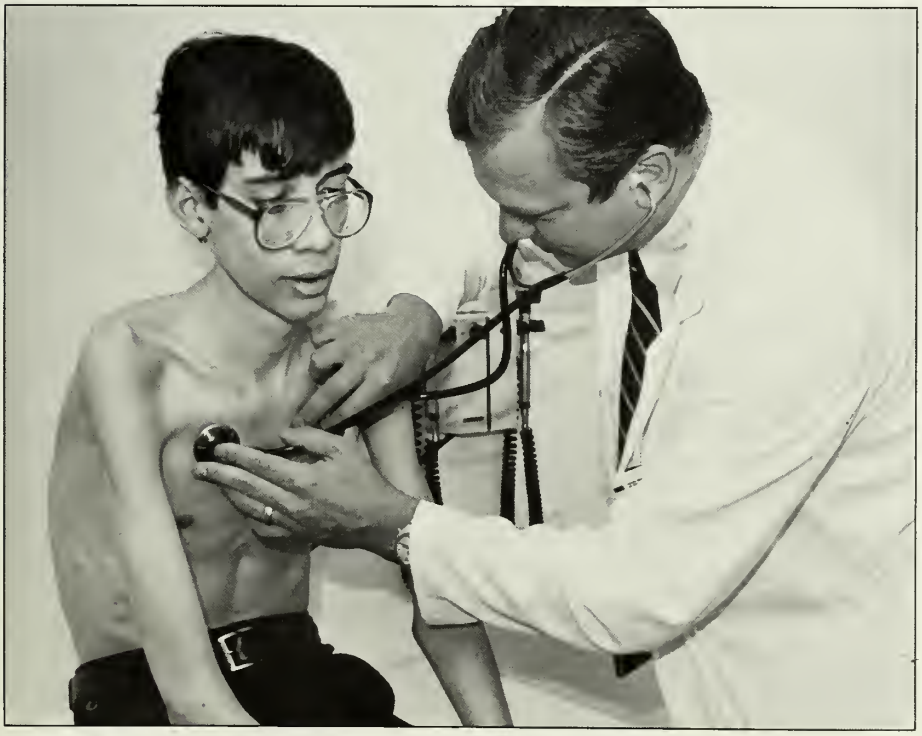
"You're aware of breathing all the time. You're aware of the humidity. You're aware of cigarette smoke. When you're really short of breath, you feel like you're under water and you can't get out. Your lungs start to hurt and burn," Smith said.

Nonetheless, Smith never missed class while he was on campus, and he earned a cumulative grade point average of 3.2 on a 4.0 scale before dropping out.

Smith since has moved with his family to the Augusta area, where his father was transferred. He stays at home most of the time now, except for monthly trips to the MCG Cystic Fibrosis Center. At 5-foot-10 and less than 100 pounds, Smith doesn't have the physical stamina to do much else. Breathing is difficult. Eating is difficult. Sitting is difficult. Concentrating is difficult.

This has given Smith a lot of time to think, to learn to accept his deteriorating condition, to understand what it's like to age and to accept death.

Thanks to modern medicine, Smith's passed the average life span, 20, of cystic fibrosis victims. Before antibiotics were introduced about 25 years ago, few cystic fibrosis victims lived more than 18 months after the disease was diagnosed. Today some die very young and some live to be active adults, but more are reaching young adulthood, Karlson said.



Glenn Smith is seen regularly by Dr. Karl H. Karlson Jr.

At the MCG Cystic Fibrosis Center, a team of specialists and subspecialists has mobilized to treat Smith and more than 60 other cystic fibrosis victims.

The team approach is needed because of the multifaceted nature of the disease, Karlson said. MCG's team ranges from physicians and surgeons with expertise in treating cystic fibrosis, to social workers, nutritionists, respiratory therapists and specially-trained nurses. Experts in such areas as internal medicine, gastrointestinal medicine, endocrinology, obstetrics, gynecology, infectious diseases, ear, nose and throat problems, and pediatric and thoracic surgery, work together, using specialized laboratory and clinical facilities.

Once every three months Karlson and a nurse go to Waycross, Ga., to treat children with cystic fibrosis and other lung diseases. The visits ensure that children who are slightly ill, but perhaps not ill enough to make the 190-mile trip to Augusta for treatment, are seen and treated by a specialist. Karlson's trips to Waycross allow most of the children to travel to Augusta only once a year. In Augusta, the children are examined with more sophisticated equipment and are seen by a variety of specialists.

To better understand cystic fibrosis, MCG is participating with the Centers for Disease Control in Atlanta on a survey of *Pseudomonas cepacia*, a pneumonia-causing bacteria that is especially resistant to antibiotics. Researchers are trying to determine why cystic fibrosis victims harbor the bacteria in their lungs and whether it's harmful. They also want to find out how common the germ is, how to prevent its spread and what can be done to treat those who have it.

Ultimately, researchers hope to find the reason that bacteria cause the respiratory symptoms — recurring bronchitis and pneumonia — that are common to cystic fibrosis patients. They also hope to find the mechanism that causes cystic fibrosis, Karlson said.

Said Lily's mother, "I have hope" — hope that with the latest research developments, with more money available to study the disease and with more people aware of it, a cure will be found. ■

When dental disease becomes deadly

by John Donnelly

A simple cavity can be lethal, a loose tooth disastrous, for children with diseases such as leukemia and hemophilia.

"Ordinary, healthy children handle dental disease pretty well," said Dr. David Myers, chairman of the Department of Pedodontics at the Medical College of Georgia's School of Dentistry. "With the medically-compromised child, the same dental disease can put his life at risk."

A child with hemophilia could bleed to death if the proper steps to ensure clotting were not taken before a tooth was extracted. An abscessed tooth could be fatal to a child with leukemia unable to fight the infection because of a low white cell count.

Another group of children whose lives may be threatened during simple dental procedures are those who have had major organ or bone marrow transplants. Their problems arise from the immunosuppressants they must take so their bodies won't reject the transplanted organs.

Twelve-year-old Rhoda Grant of Glenwood, Ga., knows firsthand what this means. She receives follow-up treatment at MCG for a bone marrow transplant performed in Florida, and one of her treatment stops is MCG's dental clinic.

At a recent visit to the clinic for a regular checkup, Rhoda was seen by Dr. MaryAnn Battenhouse, assistant professor of pedodontics.

"The procedure (examining and cleaning Rhoda's teeth) is the same as for a non-medically compromised child," Battenhouse said. "But, the cleaning could take longer for some of the kids, for instance a child on cyclosporin." This immunosuppressant causes gingival overgrowth, in which the gum tissue covers part of the teeth, making cleaning more difficult but more important, she said.

In her examination, Battenhouse found Rhoda had two cavities. "These have developed since Rhoda's bone marrow transplant," she said. "Any dental problems she had before the transplant were treated to prevent the risk of infection."

One of Rhoda's cavities was severe enough to require a local anesthetic. The anesthetic Battenhouse used to numb the area was Xylocaine, the same local anesthetic any patient would receive. Some patients, especially those with cardiac problems, would require a different local anesthetic because of their other medications. An interaction between the drugs could jeopardize a child's life.

"Dental treatment using local anesthesia alone isn't possible for some medically-compromised children," said Myers, MCG's pedodontics chairman. General anesthesia is used in cases where a child is not mature enough to cooperate during lengthy dental procedures. It can also be warranted by a child's medical condition. If a hemophiliac required an extensive dental procedure, he might be better managed having the entire procedure during one visit under a general anesthetic. Doing the dental work in several visits would be psychologically and medically difficult.

The chance of infection is a major concern whether the procedure is done in an operating room or the dental clinic. Applying fluoride to Rhoda's teeth is one precaution taken to reduce this possibility, Battenhouse said.

Rhoda's routine visit to the dentist occasions another special preventive measure the 12-year-old takes in stride. For the next three days, she will take penicillin tablets. Rhoda's chances of infection from the dental procedure are greater than normal because her immune system is depressed by the drug she takes to fight rejection of the transplanted bone marrow. The penicillin lowers the possibility of infection.

Good dental care is critical for children who have had organ transplants, hemophilia and other medical problems, Myers said. "You think the parents would be very concerned about disease prevention, since it is so important to these kids," he said. "Sometimes, however, the parents feel that the child doesn't have the same opportunities as other children and they continue to give the child candy and other snacks that work directly against the healthy oral conditions we are trying to create. They feel that since the child is denied so much, they can't take away his candy.

"While you would believe the patient and the patient's parents would be highly motivated to follow a treatment plan, they may be really going in the other direction. (That's why we) take the time to try to educate the parents about the necessities of good oral hygiene. We try to keep the kids from getting into complex dental emergency situations."

Such emergencies begin on a microscopic level with a cavity. As the cavity grows larger it not only destroys the enamel but infects the nerve. If nothing is done, the infection may cause an abscess. For a child taking medication that reduces his ability to fight off infection, such neglect can be life-threatening.

For Rhoda, the three-hour trip from Glenwood to Augusta for a dental appointment might seem long, but she and other children like her don't have many choices. A private dentist may not have the time to treat such children, Myers said.

"Time is a major factor," he said. "A dentist in private practice usually doesn't have time to make hospital visits. These children are usually treated in the hospital where the necessary medical assistance is available. Private practices are normally not structured to provide this type of care.

"At MCG, we see many kids who are sick or medically-compromised. They represent a small section of the population, but their treatment requires a great outlay of time and resources. If we had to refer them out, there wouldn't be any good alternatives. There really are no simple answers to providing this care so we take care of them here in the hospital." ■

Karen Richards (L) assists Dr. MaryAnn Battenhouse during Rhoda Grant's regular checkup at MCG's dental clinic.

Research Update

by Karen Williams

A drug to defeat the pain

An MCG researcher is comparing aspirin and liquid ibuprofen to see which drug more effectively treats the symptoms of juvenile rheumatoid arthritis.

Dr. Albert Pruitt, Ellington Charles Hawes professor and chairman of pediatrics at the Medical College of Georgia, is comparing the two drugs to see which one reduces the inflammation and fever of juvenile rheumatoid arthritis best. He also is studying possible side effects.

Rheumatoid arthritis is a systemic disease that can strike at any age, Pruitt said. The disease causes the body to attack its own tissues causing painful and inflamed joints, fever, weakness and an elevated white blood cell count.

While no known cure for this disease exists, there are recommended drug treatments for adults. Only limited drug treatments exist for children, however, because these simply haven't been studied, Pruitt said.

"Our study, done in conjunction with four other institutions, will help answer the question of which drug therapy works best for children and at what dosage," he said.

The MCG study, involving 12 rheumatoid arthritic patients aged 2 to 14, is expected to be completed in September.

Researchers take on sickle cell

Research is under way at the Medical College of Georgia to boost the survival rate of children born with sickle cell anemia.

Sickle cell anemia, an inherited blood disorder, causes the red blood cells to become distorted, assuming a sicklelike shape, so that cells can't carry enough oxygen to meet the body's requirements. As a result, many with sickle cell die of infections and other complications related to anemia.

The disorder, confined mainly to blacks, causes such symptoms as fever, bone pain and jaundice.

"Children (with sickle cell anemia) under 5 years of age have a 600-fold increased risk for fatal infections compared to the general population," said Dr. Virgil McKie, assistant professor of pediatrics and cell and molecular biology at MCG.

"In order to combat these deaths, we are performing recombinant DNA research to understand why sickle cell anemia occurs," added Dr. Alexander Felice, assistant professor of cell and molecular biology.

Several current and possible ways of treating sickle cell are under investigation at MCG to determine how effective and practical they are, Felice said. Therapies under study are:

- Recombinant DNA techniques, which are being used to assess the relationship between sickle cell anemia and alpha thalassemia. Alpha thalassemia, present in 37 percent of the black population in southeastern Georgia, is a genetic condition that causes red blood cells to be smaller than normal. Patients with alpha thalassemia and sickle cell may have milder clinical symptoms of sickle cell.
- Drugs that would decrease sickling by modifying the red cell membrane or the hemoglobin, which carries oxygen from the lungs to the tissues and carbon dioxide from the tissues to the lungs.
- Drugs, now used in cancer chemotherapy, that would elevate levels of non-sickled hemoglobin.
- Bone marrow transplantation in select individuals. The technique, which involves replacing bone marrow producing sickled cells with bone marrow that can produce normal cells, has been used successfully in some individuals with Cooley's anemia.

"Through (umbilical) cord blood screening (at birth), we identify about 80 new children a year in Georgia with sickle cell anemia," McKie said.

"With early identification, we can enroll the child in our clinical program, provide education for the family and primary physician, provide specialized medical care and accrue clinical and hematological data to further understand and study ways to combat this disease."

(L to R) Jerry Wilson, Dr. Alexander Felice and Dr. Virgil McKie.

Counterattack on an infant killer

MCG researchers are on their way toward preventing death by a common infant killer.

The killer, group B streptococci, affects one in 1,000 babies born. It is a common bacteria found in the vagina or throat of 25 percent of all women.

The bacteria is spread to the baby as it passes through the colonized mother's vagina at birth. Within three days, the bacteria can be found in the baby's mouth, skin and stool. The bacteria causes the baby to go into shock, his blood pressure drops, and he may get meningitis and pneumonia.

One or a combination of these kills the infant, resulting in 6,000 to 9,000 infant deaths a year, said Dr. Frederick Cox, associate professor of pediatrics at the Medical College of Georgia.

"We are trying to prevent colonization of group B streptococci among newborns by preventing the attachment of the bacteria to the baby," Cox said.

Cox has shown this can be done in mice and hopes to begin using the

technique in humans this year.

Group B streptococci attach to human cells in much the same way a key fits into a lock. The group B streptococcus is the key which attaches to the receptor site of the cell. "If we can stop this attachment process, we can stop an infection in the first stages of its development," Cox said.

Cox has extracted lipoteichoic acid from the bacteria and applied it to mice. Lipoteichoic acid — which is the chemical group B streptococci use to attach to cell receptor sites — was placed on the colonized mother's vagina and the skin of her offspring at birth.

The chemical extract filled the receptor sites in offspring so that bacteria couldn't attach to the cells. In the adult mice, the extract displaced existing bacteria, Cox said.

"This method is non-toxic and avoids the problems associated with antibiotics or a vaccine used for disease prevention," he said. "In essence, we can remove group B streptococci from high-risk mothers."

Gaining an edge on heart disease

Children's physical activity, eating habits and psychological characteristics may predispose them to coronary heart disease later in life, Medical College of Georgia researchers believe.

Drs. William Strong, Maurice Levy and Frank Treiber suspect such lifestyle patterns in children as young as age 3 may cause them to have heart disease as adults.

Treiber, assistant professor of psychiatry and health behavior, Levy, MCG professor, and Strong, Charbonnier professor of pediatrics, have obtained a grant of more than $1 million from the National Heart, Lung and Blood Institute to study the effects of lifestyle patterns on children's future health. MCG is one of seven medical centers in the country chosen to participate in the five-year study.

"We will look at the health histories of 24,000 families in Richmond County," Treiber said. "Of these families, we will identify 3- and 4-year-olds from 50 low-risk and 50 high-risk families for coronary heart disease . . . We will be studying the parents as well."

Three lifestyle behavior patterns thought to have an impact on coronary heart disease will be examined, Treiber said. They are:

- The child's activity level, ranging from highly active to sedentary.
- The child's diet, as well as how fast he consumes food at mealtime.
- Specific behavioral chacteristics such as whether the child has a type A personality (hurried, aggressive and impatient), and how he copes with stress.

On the road toward wiping out heart defects

Researcher Dr. Margaret Kirby has identified one cause of congenital heart defects.

Now the associate professor of anatomy at the Medical College of Georgia is trying to find ways to prevent it.

Kirby has identified groups of cells, called neural crest cells, which are necessary for healthy heart development. The cells develop next to the nervous system. During fetal development, the cells migrate to parts of the nervous system throughout the body, including the heart.

Manipulation of the cells may lead to the prevention of many congenital heart abnormalities. By removing neural crest cells from the developing nervous systems of chicken embryos, Kirby has been able to duplicate many heart abnormalities found in newborns.

Since 1983 when Kirby made her original discovery about the importance of the neural crest cells in congenital heart defects, she has been able to produce two types of congenital heart defects in chicken embryos with 100 percent accuracy and a whole variety of others with less reliability.

"My discovery of the importance of the neural crest cells in congenital heart defects was serendipitous," Kirby said. "The nervous system has two rows of neural crest cells. I found that if you remove certain neural crest cells, you will produce a heart defect. It was a startling discovery."

Two types of neural crest cells affect the heart. One is responsible for the supply of nerves to the heart, and the other affects the aorta and pulmonary arteries, areas often involved in congenital heart defects.

Kirby has found that if she removes the cells in the neural crest that migrate to the heart, she can cause the chicken embryo heart to develop abnormally. The abnormality depends on which neural crest cells are taken out.

"The problem of congenital heart defects is one that affects many more people than I realized," Kirby said. "One out of every 1,000 newborns have congenital heart defects. In addition, a recent study showed that 25 percent of all first-graders have heart murmurs. Many people have less severe heart defects and never know it.

"The best solution is to prevent the problem in the first place. This means that we have to protect the fetus against environmental stimuli and genetic

Dr. Margaret Kirby

susceptibility."

Many congenital heart defects can be prevented through the elimination of chemicals that cause birth defects. Several drugs are believed to cause defects including Accutane, a drug used in the treatment of acne, and Nimustine, an anti-tumor agent, she said.

Today, surgery is possible after the baby is born. However, Kirby's research may one day allow physicians to perform surgery while the fetus is still in the uterus.

"By the 48th day of gestation we will know by the enzymes and characteristics of the fetus whether it has a congenital heart defect or not," Kirby said.

"The goal is to eradicate congenital heart defects. That means we have to understand better how and why they occur. Our real work has just begun."

Monitoring mold allergy

Dr. Margaret Guill is trying to find out just how important mold is in the initiation of asthmatic attacks in children with allergies.

"This is especially important in our area of Georgia and South Carolina because here we have more mold spores in the air than pollen," the assistant professor of pediatrics and medicine at the Medical College of Georgia said.

Guill's three-year study involves giving children who are allergic to molds the inhalation challenge. During the inhalation challenge, the child inhales increasing amounts of mold extract and then is tested to see how his pulmonary function reacts.

Dr. Margaret Guill

The test lasts about two hours. Afterwards, the child is watched in the lab for another eight hours to prevent complications that might arise from mold extraction inhalation. Complications may range from simple allergic reactions to severe asthmatic attacks involving sneezing, wheezing and an inability to breathe. Blood tests are given to test for histamines, substances released by the tissues during allergic reactions.

Allergy-prone individuals have a hard time escaping mold because there are literally hundreds of molds, both indoors and outdoors, Guill said.

Molds are furry growths found on the surface of organic matter. They are found in such damp places as old shoes, decaying leaves and basements.

"Although mold allergy is not a life-threatening problem, it does cause a loss of time from school for children under 17," Guill said. "Twenty-five percent of the days missed at school are caused by allergies."

MCG discovery bodes well for PKU victims

One of several mechanisms that cause mental retardation in victims of PKU and other genetic diseases has been discovered at the Medical College of Georgia.

PKU (phenylketonuria) prevents its victims from metabolizing phenylalanine, an amino acid found in protein. If victims ingest the amino acid during brain development, they will suffer from mental retardation.

This means they can't eat the foods that most children love — hot dogs, pizza and ice cream — until their brains stop developing at about age 20. They have to go on a special diet low in phenylalanine.

"The good news is that with diet alone, mental retardation can be avoided," said Dr. Frits Hommes, professor of cell and molecular biology at MCG.

"The bad news is that the taste of the diet is horrible and although one company has made the diet more palatable, the diet is still a great burden to the patient. It is hard for a youngster to avoid eating a fried egg in the morning or a hamburger with friends at night."

Mental retardation in PKU victims occurs in part because myelin, an insulating material surrounding nerves, breaks down at unusually high rates, said Hommes, who also serves as director of the biochemical genetics laboratory at MCG. The genetics lab is a joint venture of MCG and Gracewood State School and Hospital.

Breakdown and renewal of tissue is a normal process throughout the body, such as when skin sloughs off and is replaced by new layers of skin. Under normal conditions, myelin breaks down and is renewed over several months. In those with PKU, however, the myelin breaks down in a matter of days. The rapid breakdown prevents certain nerve connections from forming or stabilizing, Hommes said.

Hommes has discovered a major reason why the myelin breaks down so quickly. Unusually high levels of the amino acid phenylalanine in PKU victims' brains inhibit synthesis of a substance called cerebroside sulfate. Cerebroside sulfate's job is to stabilize myelin turnover, Hommes said.

"This was observed in rats at about the same stage of brain development as a child of 8 years," he said. "What we find in laboratory animals can be applied to humans because the basic mechanism involved is the same.

"It turns out that this particular mechanism operates not only in PKU (victims), but it (also) operates in (those with) other diseases that affect the metabolism of amino acids."

Hommes suspects that high levels of any amino acid in the brain would cause myelin to break down at an unusually high rate. He has tested four amino acids so far with similar results.

At least one other mechanism is believed to cause rapid breakdown of myelin and mental retardation — the inhibition of synthesis of neurotransmitters. This second mechanism, however, is believed to be of lesser importance, Hommes said.

Now that researchers know of the inhibition of cerebroside sulfate synthesis, they may be able to predict how much phenylalanine a PKU victim can ingest before suffering toxic effects. It may be that these people can tolerate a certain amount of the amino acid before formation of cerebroside sulfate is inhibited, Hommes said.

MCG researchers also hope to determine the age at which a PKU victim could get off of a strict diet low in phenylalanine. It may be that this particular mechanism only operates during brain growth so that victims can begin to eat a normal diet once brain development stops, Hommes said. ■

Dr. Arlie R. Mansberger Jr.

by Toni Baker

It was during the Great Depression that Dr. George Newell made his periodic visits to the home of a boy growing up in a small mining town near Pittsburgh.

He'd come calling with a black bag and a sincere interest in the family of that boy. Some days he'd leave with a couple of dollars; other days payment was made in canned goods.

Regardless of the pay, Newell always said "Thank you," and he always came back.

And he always left a mighty big impression behind.

"When he came to the house when you were a kid, you were going to get well. There wasn't any question in your mind," recalls Dr. Arlie R. Mansberger Jr. "The minute he walked in you felt better."

Newell made Mansberger feel something else as well.

Mansberger wanted to be a George Newell.

His family, on the other hand, wasn't optimistic.

"My sisters were all valedictorians. But I wasn't." Instead young Mansberger had a flair for sports, even had an athletic scholarship to Western Maryland College.

"My mother wanted me to be a coach. She thought I might not finish college or if I did, I might not do well enough to get in medical school.

"But when you are a kid you just think everything can be done."

As it turned out, Arlie Mansberger, the child, wasn't wrong.

Mansberger waited on tables, played a trombone for a dance band and worked in the steel mills to earn the money he needed. He joined the infantry and got his tuition paid for.

Within three years, he'd completed the requirements for medical school and was accepted to the University of Maryland School of Medicine.

By the summer of 1947 he was beginning what was then a two-year internship at the University of Maryland Hospital.

Dr. Arlie R. Mansberger Jr. (R) and Dr. James Wynn perform a thyroid lobectomy.

It was time for choices and not easy ones.

"When I was taking care of premature babies . . . to take care of one of those and have them survive (made me want) to be a pediatrician. When I was an internist, I loved to take care of the acute MIs (myocardial infarctions). If they survived, that was a great thing. What I found out as I analyzed all that, was what I really liked was this acute relationship, working with people during critical illness, but not being part of long-term care. I didn't like to go to the clinic. I didn't like to change the dose of digitalis or diuretic to take care of the heart failure patients.

"What I liked was an intense relationship that lasted for a brief period of time where you could see the results of your activity and I decided the place you could do that best was in surgery."

That decided, Mansberger figured he'd finish his training and go back to a small town to practice. But by the time he finished a year as a research fellow and a four-year surgery residency, he had an obligation to fill. The Army had paid for much of his education, and it had other plans for him.

He was sent to Walter Reed Army Institute of Research, where he found himself surrounded by well-trained doctors and interesting research.

Then fate dealt another hand.

His alma mater had opted to move from part-time to full-time faculty. It was 1955. The first full-time chairman of the Department of Surgery, Dr. Robert Buxton, was looking for a faculty member. Buxton heard about Mansberger and decided he'd found his man.

Time for more choices.

Buxton was offering academics. Several of Mansberger's friends were offering more lucrative positions in private practice.

Mansberger reasoned he'd never forgive himself if he didn't give academics a try.

That decision marked the beginning of 30-plus years in academics that continues today with Mansberger as chairman of the Department of Surgery at the Medical College of Georgia.

It's been a career marked by distinction and honor.

One honor that touched Mansberger deeply came with the new year.

Mansberger has been selected as 1986 president of the Southern Surgical Association — one of the top two surgery associations in the country.

That appointment brings with it a five-year commitment to the council of the prestigious association.

"It's a real honor . . . They don't ask you (if you want the job). I guess they can't imagine anybody saying no," he chuckled. "It's almost like a peer review."

The 63-year-old surgeon admits the appointment surprised him. But he could not be more pleased that his fellow surgeons chose to select him for a post he wouldn't have even let himself dream about.

The appointment tops a long list of professional achievements.

As a surgeon and an administrator, first at the University of Maryland and later at MCG, Mansberger has broken much ground.

He remembers the early days in Maryland, sitting with other new faculty members in the shadow of Johns Hopkins University and talking about how the University of Maryland might find its place in the sun.

Those conversations led to a trip to the Surgeon General in Washington where a grant was obtained for what was to become the premier shock-trauma service in the country.

Also in those early days at Maryland, Mansberger and Dr. R. Adams Cowley were among the first to recognize that trauma was a major killer of young, productive Americans and that with proper triage, transport and medical care, many trauma victims could be saved.

Maryland was the ideal state to set up a rapid transport and treatment system. Patients could be at the Maryland Institute of Emergency Medical Services Systems Inc. in Baltimore within a half-hour with a helicopter transport system.

It was both an exciting and discouraging time.

Mansberger played a part in development of techniques such as the trap door operation to resect the first rib from inside the body and control bleeding from the subclavian artery when a patient had been shot or stabbed there.

Then there were the frustrations, such as when doctors, unaccustomed to such an organized trauma system, were not willing to give up their patients to the innovative shock-trauma center.

Mansberger spent 17 years in Maryland. Then fate dealt him another hand.

Buxton, the chairman, was killed in an automobile accident. "Suddenly my whole life had changed." Mansberger was thrust into the position of acting chairman. His old job in trauma was filled.

Mansberger took to the chairmanship. Bureaucracy in medical schools was smaller then, and he had time to administer faculty, do surgery and teach.

He admits some disappointment at not getting the job permanently. But the job was filled from off campus. "I decided I'm just going to get out of the whole (academic) business."

Then the telephone rang.

It was long distance from Augusta, Ga.

In June 1973 Mansberger got his chairmanship.

During his tenure, the MCG Department of Surgery has doubled its faculty positions to a total of 42 today. Sections of otolaryngology and plastic surgery have been developed. With these new sections came new programs such as the comprehensive speech and hearing center and a replantation team that can reattach severed appendages.

Not suprisingly, Mansberger established a burn and trauma service. MCG has the first Level 1 shock-trauma center established in Georgia and is the designated shock-trauma center for East Central Georgia. The Level 1 designation means that the most critically ill patients are brought to MCG's trauma center for care.

Mansberger worked to get an open-heart surgery program started at the Veterans Administration Medical Center, which is affiliated with MCG, at a time when the VA was not funding new programs. He also helped establish that facility's first intensive care unit and greatly expanded the critical care capabilities of the VA.

The MCG chairman increased the number of MCG general surgery house staff from four to five. He established an academic track for residents interested in working at a medical school.

He established a departmental library and participated in getting the Georgia Radiation Therapy Center planned and open.

Renovation of the operating suite expanded the total number of rooms from 10 to 17. He established a liaison with the University of Georgia's School of Pharmacy, making it possible for doctors of pharmacy to be at the MCG campus helping with research and patient care.

"Having been part of the progress of this institution has been real exciting and real rewarding," Mansberger said.

"I think the most exciting thing is to be part of training doctors." He counts among his most-proud-of facts, the fact that every doctor that has completed a surgery residency in his department has taken and completed his boards. ■

Dr. Arlie R. Mansberger Jr.

WHO CAN BE A DONOR?

	KIDNEY	HEART	HEART/ LUNG	LUNG	LIVER	PANCREAS	BONE	SKIN	EYE
Age	6 mos-65	2-45	2-35	1-50	2 mos-50	1-60	16-60	14-75	no limits
Cardiac arrest resuscitated	Prob OK	No	No	Possibly	Prob OK	Prob OK	Heart beating cadaver not mandatory	Heart beating cadaver not mandatory	Heart beating cadaver not mandatory
Chest/abd trauma	Important	Extremely important	Extremely important	Extremely important	Extremely important	Important	Little importance	Not important	Not important
No active infections	Mandatory	Mandatory	Mandatory	Mandatory	Mandatory	Mandatory	Mandatory	Mandatory	Mandatory
No previous disease of organs	Mandatory	Mandatory	Mandatory	Mandatory	Mandatory	Mandatory	Mandatory	Mandatory	Mandatory
No presence or history of communicable disease	Mandatory	Mandatory	Mandatory	Mandatory	Mandatory	Mandatory	Mandatory	Mandatory	Mandatory
Hypotension	Sensitive	Very sensitive	Very sensitive	Very sensitive	Sensitive	Sensitive	N/A	N/A	N/A
Vasopressor, i e dopamine sensitive	Yes	Very	Very	N/A	Very	Yes	N/A	N/A	N/A
Weight important	No	Yes	Yes	Yes	Yes	No	No	>100 lbs	N/A
Body build important	No	Yes	Yes	Yes	Yes	No	No	No	No
Blood type	Mandatory	Mandatory	Mandatory	Mandatory	Mandatory	Mandatory	Mandatory	No	Occasionally
Additional physician consults required	Usually not	Yes	Yes	Yes	Possibly	Usually not	No	No	No
Additional lab needed	Yes Kidney specific	Yes Heart specific	Yes Heart/lung specific	Yes Lung specific	Yes Liver specific	Yes Pancreas specific	No	No	No
Time needed to set up additional teams	Usually not	Yes	Yes	Yes	Yes	Yes	Possibly	Possibly	Usually

THE GIFT OF LIFE

The number of patients in the United States with organ and tissue failure continues to grow. More than 10,000 people are awaiting kidney transplants, 30,000 are awaiting corneal transplants and several hundred need hearts, livers and other organs. Despite these statistics, all too many organs and tissues are wasted. Every person, upon their death, can give the ultimate charitable gift — life.

The Medical College of Georgia Organ Procurement Program is part of a national network of organ and tissue recovery programs that is set up to recover or coordinate recovery of tissues and organs for transplantation. Specialists are available 24 hours a day to discuss the donation process and provide other assistance.

If you would like to be a donor, or if you would like to find out more, contact an MCG organ procurement coordinator at 404-828-3893 in the Augusta area and 912-234-2213 in the Savannah area. Outside of eastern and southern Georgia, contact 1-800-24-DONOR.

Please remember, most families will consider organ donation but do not think of it when their loved ones die. It's up to you to act now.

Giving. . .

Supporters of the Medical College of Georgia are being encouraged to name MCG Foundation Inc. as the beneficiary of gifts in wills and other trust arrangements.

The Board of Regents of the University System of Georgia recently requested that individual colleges and universities within the system encourage their supporters to name tax-exempt foundations at particular schools as beneficiaries of such gifts. This procedure is expected to ease the administrative aspects of managing the gifts.

A gift made to any unit within the system is technically the property of the board of regents. The regents take official action to designate gifts for their intended purposes.

Officials at MCG created MCG Foundation Inc. in 1954 to administer its gifts. If you have provided for the Medical College of Georgia in your will, please check with your attorney to ensure the Medical College of Georgia Foundation Inc. is properly named.

If you are now preparing your will and are considering naming MCG as a beneficiary, feel free to contact our offices at (404)828-2515 for assistance. We can provide information on designating uses for the funds, honoring loved ones, receiving tax benefits or other aspects you and your attorney may discuss.

Medical College of Georgia Foundation, Inc.

Board of Directors

Officers

President
LaMar S. McGinnis Jr., M.D.
Atlanta

Vice President
Chenault Hailey, M.D.
Atlanta

Secretary Treasurer
Harold S. Engler, M.D.
Augusta

Assistant Secretary Treasurer
Bruce Howerton
Augusta

Executive Director
John T. Anderson
Augusta

Elected Members

Gerry H. Achenbach
Chairman of the Board, Retired
Piggly Wiggly Southern
Vidalia, Georgia

Russell Acree, M.D.
Adel, Georgia

Arthur C. Baxter
Executive Vice President
The First National Bank of Atlanta

J. Miller Byne Jr., M.D.
Waynesboro, Georgia

H. Gordon Davis Jr., M.D.
Sylvester, Georgia

Harry Dawson Sr., M.D.
Shannon, Georgia

John C. Hagler III
Chairman of the Board
GIW Industries
Grovetown, Georgia

James H. Hamilton Jr.
President
The Citizens and Southern National Bank
Augusta

J. Harold Harrison, M.D.
Atlanta

Milford B. Hatcher, M.D.
Macon, Georgia

H. Calvin Jackson Sr., M.D.
Manchester, Georgia

Robert A. Matthew, M.D.
Albany, Georgia

William H. Moretz, M.D.
Augusta

Harvey M. Newman III, M.D.
Gainesville, Georgia

Charles B. Presley
Chairman of the Board
Georgia Railroad Bank & Trust Co.
Augusta

Jerry G. Purvis, M.D.
Valdosta, Georgia

William Shirley, M.D.
Macon, Georgia

Irving Victor, M.D.
Savannah, Georgia

Ex Officio Members

Jesse L. Steinfeld, M.D.
President, MCG

H. Alan Campbell
Vice President for Business and Finance, MCG

Raymond C. Bard, Ph.D.
Dean, School of Allied Health Sciences, MCG

Judson C. Hickey, D.D.S.
Dean, School of Dentistry, MCG

Lowell M. Greenbaum, Ph.D.
Dean, School of Graduate Studies, MCG

Albert W. Pruitt, M.D.
Interim Dean, School of Medicine, MCG

Mary Conway, Ph.D.
Dean, School of Nursing, MCG

Laura Hooker, R.R.T.
President, School of Allied Health Sciences Alumni Association

John Dickey, D.M.D.
President, School of Dentistry Alumni Association

Norris O'Dell, Ph.D.
President, School of Graduate Studies Alumni Association

H. Gordon Davis, M.D.
President, School of Medicine Alumni Association

Elizabeth C. Till, B.S.N., R.N.
President, School of Nursing Alumni Association

Medical College of Georgia
Division of Institutional Relations
Augusta, Georgia 30912

Second Class
Postage Paid at
Augusta, Georgia